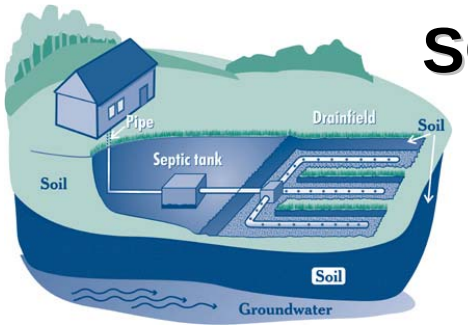
DHEC

PROMOTE PROTECT PROSPER

Ocean and Coastal Resource Management

Septic Systems In Coastal South Carolina

For The Real Estate Professional



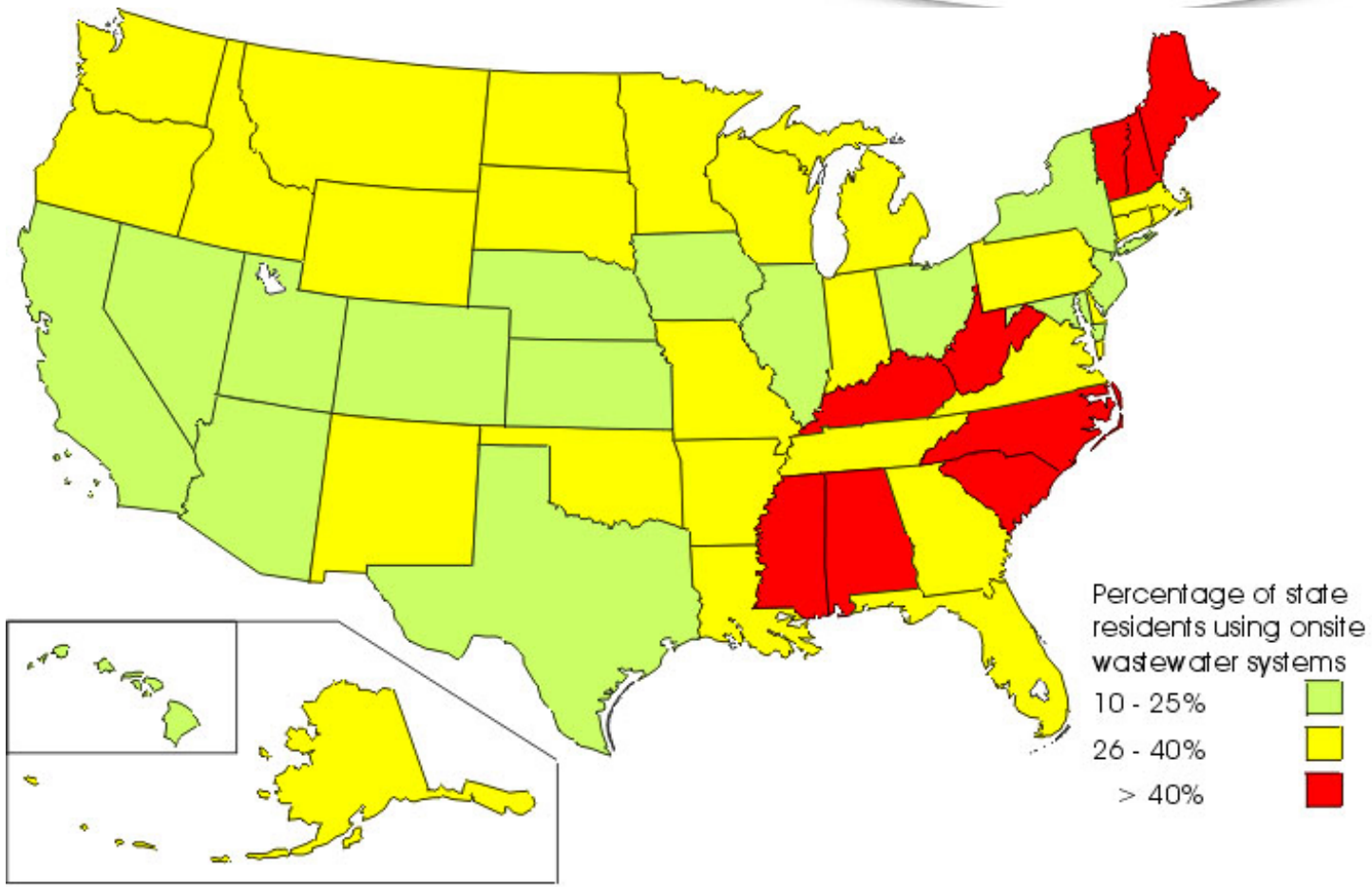
SC LLR Course No. CEC274001

Lisa Hajjar, Planning Division

Crash Course Outline

- National / local perspective
- Typical septic system questions
- Questions for you to ask a client
- Problem identification

Percentage of State Residents Using Septic Systems

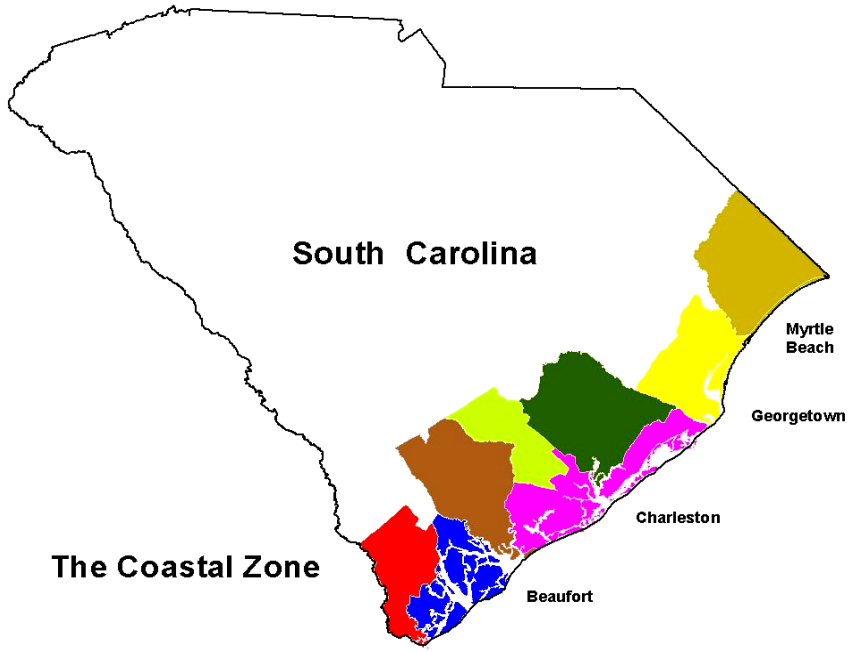


Source: U.S. Census Bureau, 1990

SC Coastal Living

- **8-county coastal zone covers 23% of state's total land area**

- **Population growth (since 1990 Census)**
  - **Beaufort Co.: 40% - 1st**
  - **Horry Co.: 37% - 2nd**
  - **Jasper Co.: 34% - 4th**
  - **Georgetown Co.: 21% - 8th**



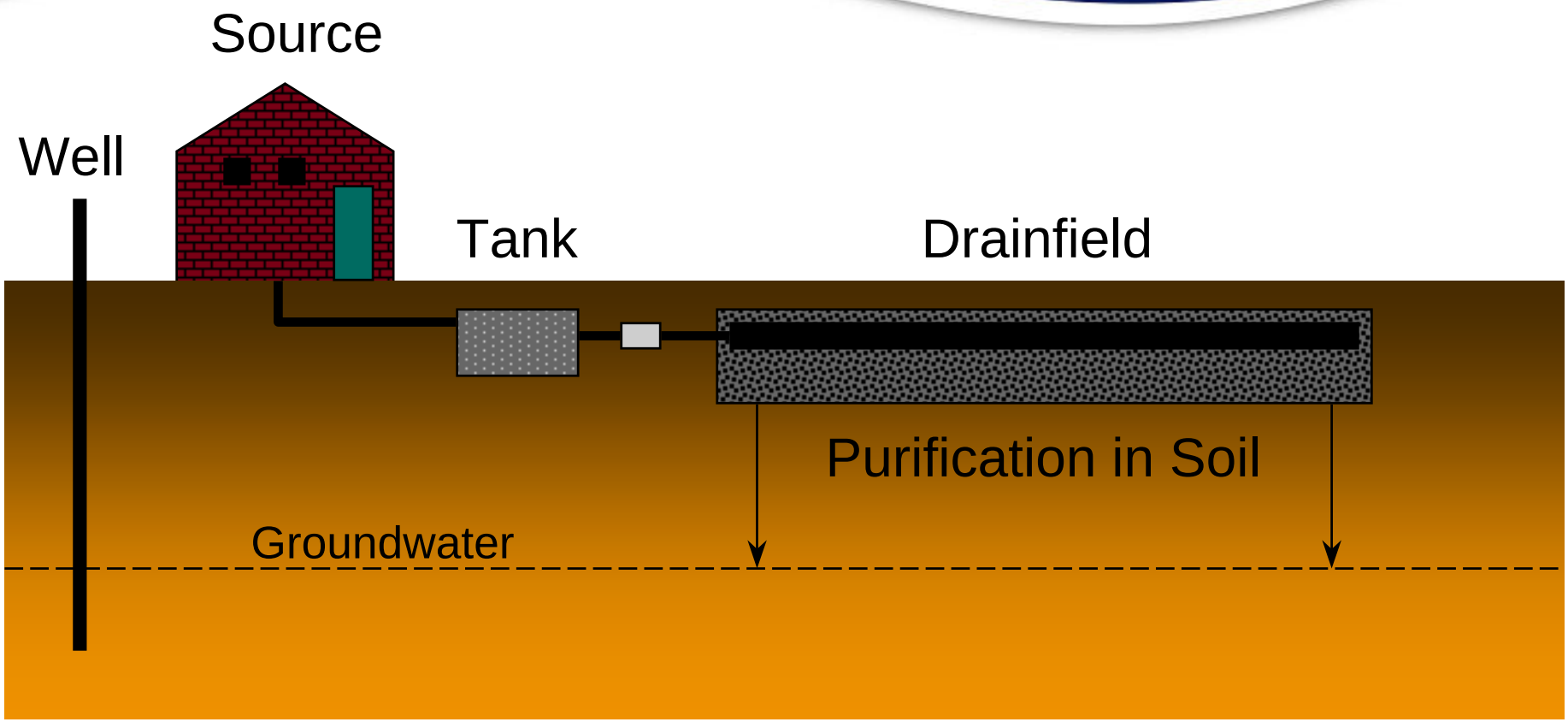
- **By 2010, one-third of state's population will live in coastal zone**

Water Quality Problems on a National Scale

- **10-30% of systems failing annually**
- **At least 10% of systems >30 yrs. old**

Realtors are the first line of offense in homeowner education!

What is a Septic System?



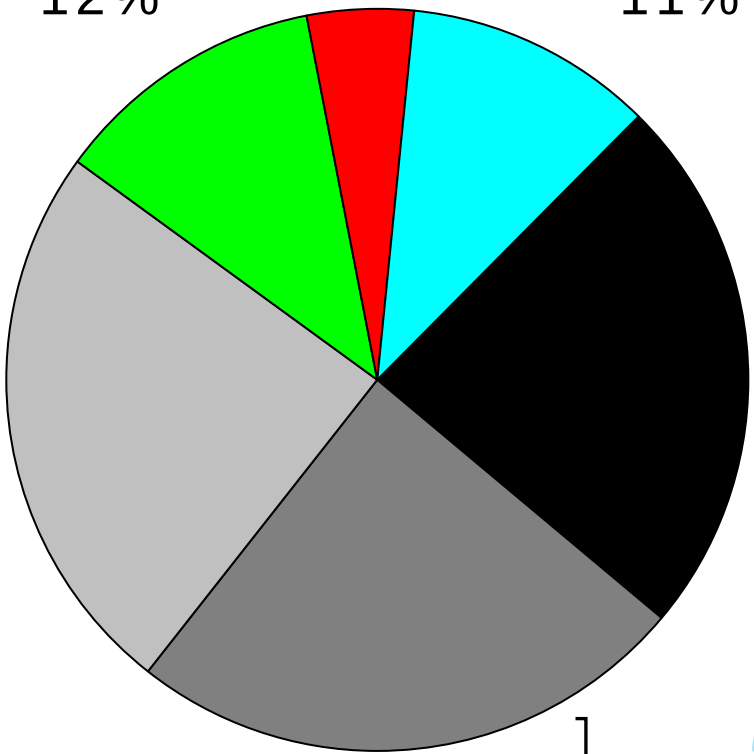
Sources

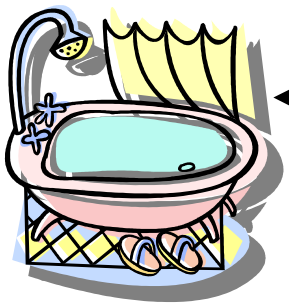
12%

5%

Misc.

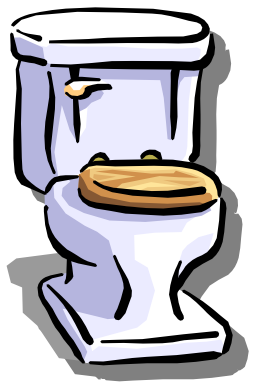
11%





24%

24%



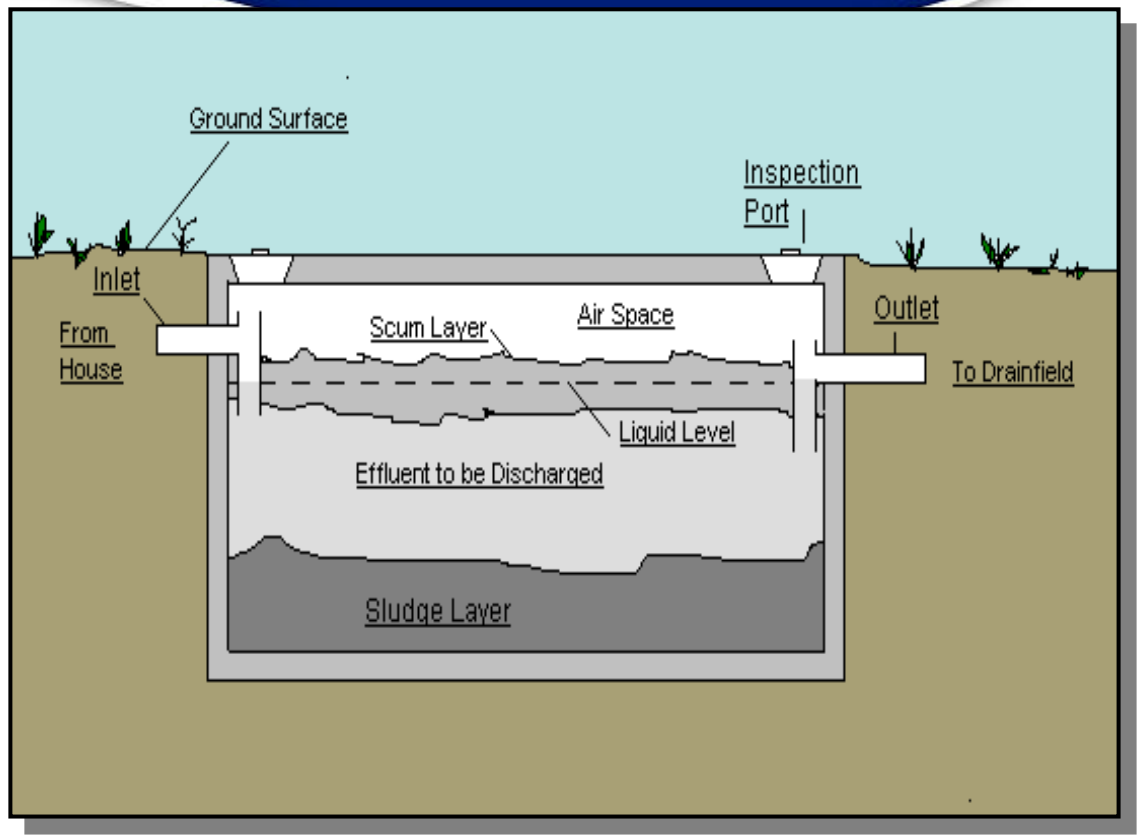
24%

Septic Tank

- Retain wastewater
- Separate & settle solids
- Anaerobic digestion
- Protect drainfield

Tees and Baffles

- **Inlet**
  - **Reduces agitation**
  - **Reduces short circuiting**
- **Outlet**
  - **Bottom in clarified zone**
  - **Keeps scum and sludge out of drainfield**



PUMP TANK TO PROTECT DRAINFIELD & SOIL!

Broken tee

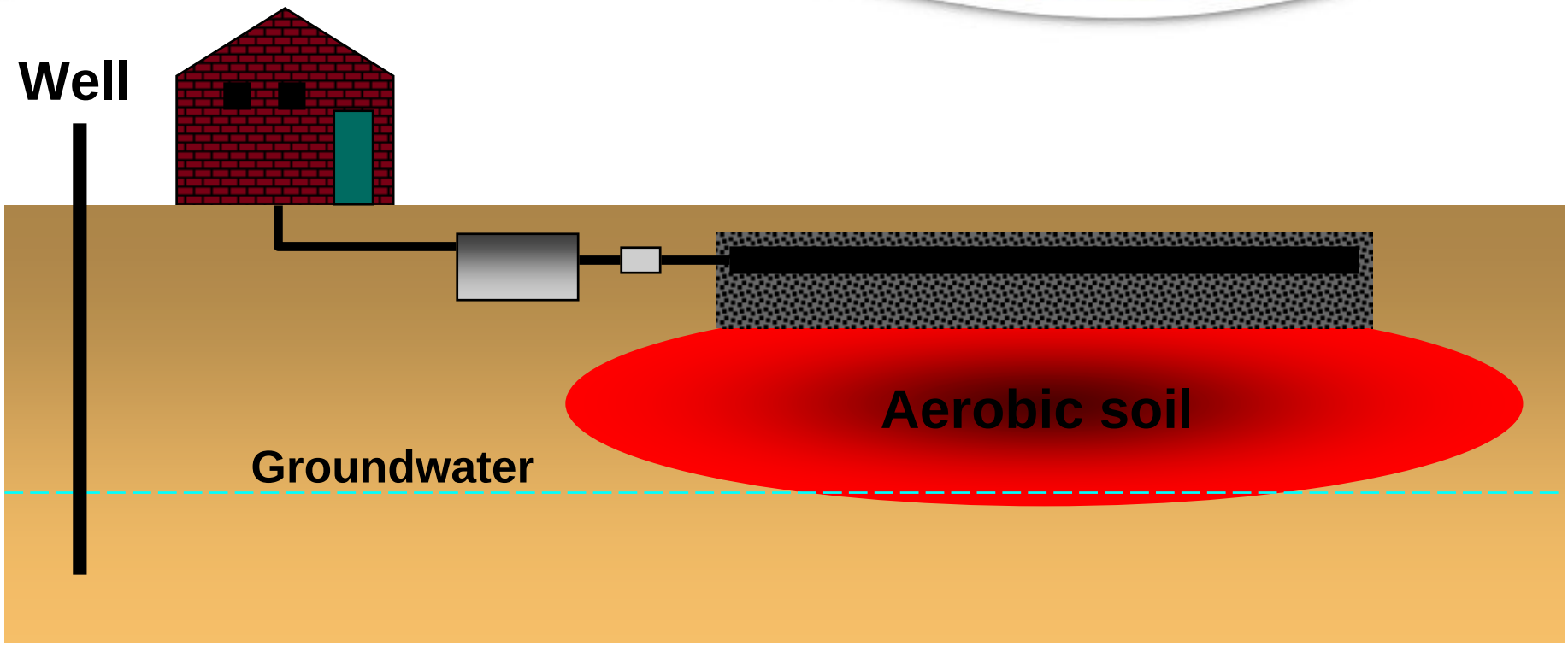
Intact tee ↓

Concrete baffle ←

Drainfield

- **Distributes wastewater over treatment area**
- **Size is important**

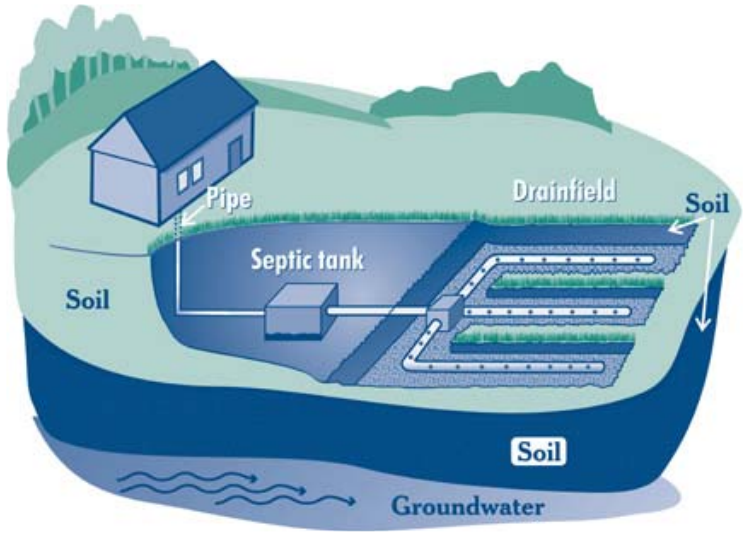
Soil - Aerobic Zone



- Provides treatment of bad stuff in wastewater
- Needs oxygen – not solids or grease or cars!

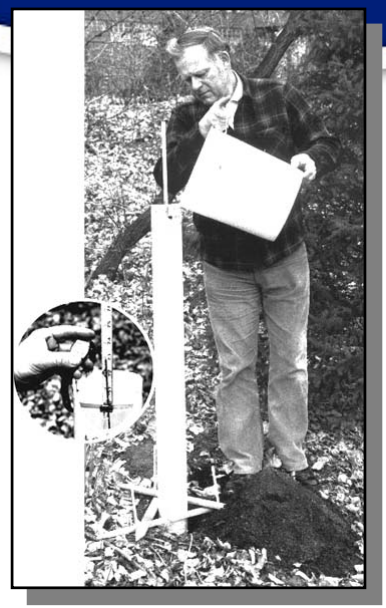
Types of Septic Systems

- **Conventional or Alternative systems**
  - **Standard design**
  - **Shallow and ultrashallow**
  - **Cap or mound**
- **Pump systems**
- **Experimental / repair systems**



Individual Systems – R.61-56

- **Soil description method replaced “perc” test (late 1970’s).**
- **Lots must meet minimum site conditions to get a permit.**
- **Permit to construct must be issued before building construction can begin.**



Individual Systems – R.61-56

- **New system must pass final inspection before permanent power and water is hooked up.**

- **Repairs, extensions, and alterations may require permit – ask DHEC.**

- **Required sewer hook-up potential repair solution if accessible.**

Subdivisions – R. 61-57 *revised*

- **5 lots or more**
- **Exempt - all lots > 5 acres**
- **Accessible sewer – no annexation required**
- **No lots sold w/out subdivision approval by DHEC (later, each lot permitted individually)**
- **New standards for public hearing**

Subdivision Development

- DHEC cooperates w/local jurisdictions:
  - County Planning and Zoning Ordinances
  - Various Town/City Ordinances
  - Water or Sewer Districts or Authorities
  - Councils of Governments – e.g., LCOG, B-C-D COG
- Pre-application meeting:
  - wastewater system, water supply
  - roads
  - drainage / stormwater
  - existing & proposed easements

“Commercial” Systems

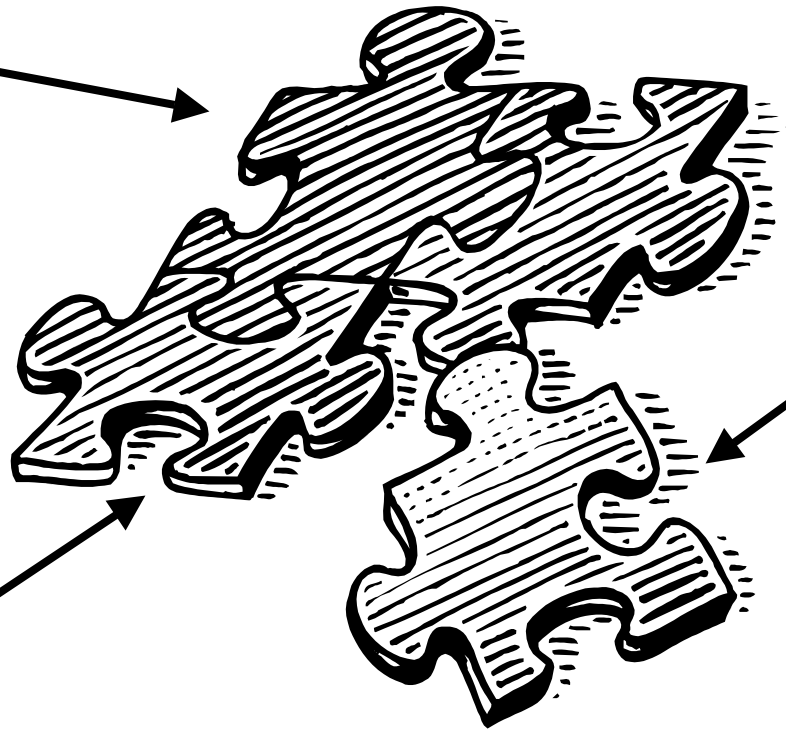
- **Domestic or “sanitary” waste only:**
  - **Co. Health Dept. if <1500 gpd**
  - **DHEC Env. Health Div. if >1500 gpd**
  - **DHEC Domestic WW Division if >1500 gpd and serves 2+ deeded lots**
    - **ND permit required (different standards)**
  - **Large systems rare on coast**

- **Process or “mixed” wastewater:**
  - **DHEC Industrial WW Division**
    - **Underground Injection Control (UIC) permit (no car maintenance facilities)**
    - **General Discharge permit (car wash)**

Septic Systems Work Great With…

Proper Siting

Proper Installation

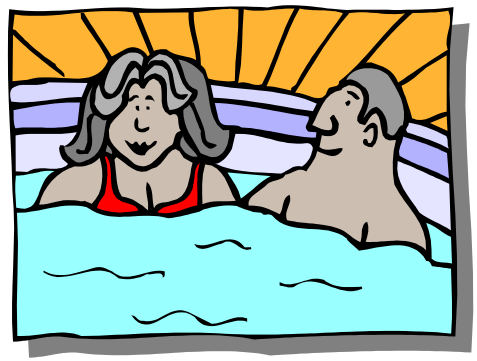


Proper Design

Proper Operation & Maintenance (O&M)

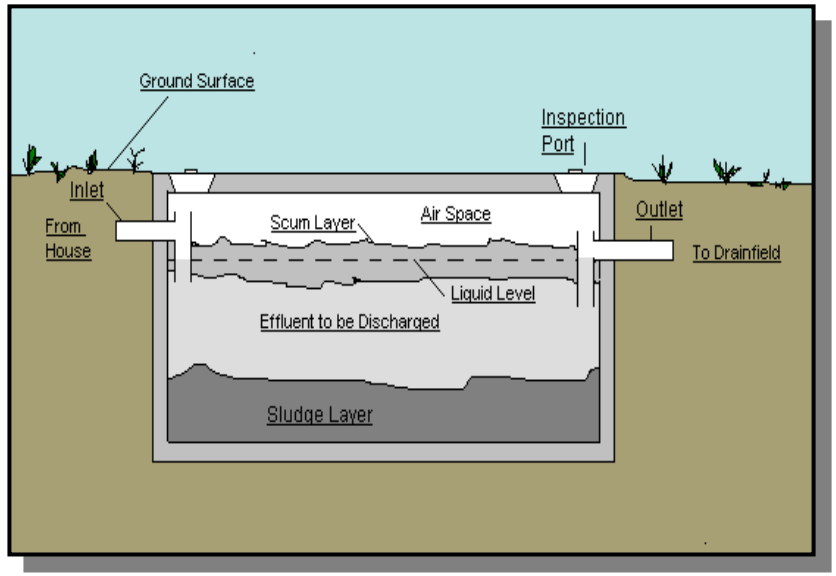
Proper Operation & Maintenance

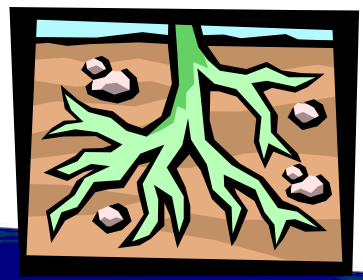
- Responsibility of property owner
- Don’t overload system
- Don’t drive over system
- Know what can & can’t go down drain
- Read handout Do’s / Don’ts



Proper Operation & Maintenance

- **Prevent problems before they happen**
- **Pump out solids from tank every 3-5 years**
- **Protect drainfield from damage**
  - **roots**
  - **excess water**
  - **excess solids**
  - **grease**





Maintenance is not…

putting additives in the system to take the place of pumping.

Additives can harm the system AND waste people's money!

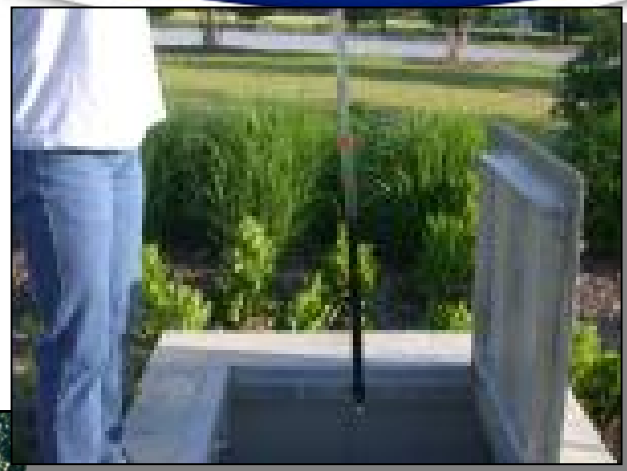
Reasons for Failure:

- Installed on poor soils or soils with high water table (older systems permitted under old “perc” method)
- System is undersized for number of users
- Site alterations after permitted
- Not properly constructed
- Not properly cared for

Reasons for Failure:

- Broken tees
- Solids or grease in drain lines and soil
- Cracked tank
- Saturated system

System's Best Friend



Recognizing and Identifying Problems

- **Be your own detective, *or***
- **Hire a licensed installer or pumper, or a “certified” inspector.**

Become a Septic System Detective

- **Standard disclosure statement**
  - **sketchy at best**
- **Get copy of permit**
  - **homeowner or health dept.**
  - **ask if system uses a pump**
- **Look in the building for red flags**
- **Look around the outside of the building for red flags**

Red Flags You Can See

- Inside of the building
- Outside of the building
- Drainfield
- Construction
- Maintenance history

Inside the Building

- **Leaky fixtures**
  - **eyes and ears**
  - **simple toilet dye test**
- **Slow drains**
- **Garbage grinder**
- **Evidence of heavy grease use and sink disposal**

Outside the Building

- Gutters and down spouts
- Parking area
- Driveway and patio
- Irrigation system
- Landscaping – surface drainage
- Out buildings
- Straight pipes

How to Locate a Septic System

- **Check the original permit information**
- **Look under the building to determine where sewer lines exit**
- **Tank is often 5-10’ away from building near where sewer lines exit**
- **Look for regular green stripes in the lawn, these are the drain lines**
- **Use a tile probe or thin rod to locate lines, septic tank, and D-box**
  - ***check for utility lines first!***

Locate System with Probe

Now draw a map!

Look for Greener Stripes

Drainfield and Tank Area

- Surfacing effluent
- Wet spots
- Areas of standing water
- Growth patterns
  - Location
  - Pattern
- Bull's-eye patterns
- Odor

Wet Spots

Surfacing

Straight Pipes Are Illegal!

Construction

- Recent additions
- Out buildings
- New cable lines, etc.
- New water line, gas line, etc.

Maintenance History

- Last time pumped
- How often
- Added drain lines

Maintenance Record

USE THE FOLLOWING SPACES to record information about your own septic system. Some of this can be copied off of your Permit which might be obtained from your county health department. Having good maintenance records can be a positive selling point for your home when the time comes (wouldn't you rather buy a car that has a proven maintenance record?).

Permit Number: _____

Issued to: _____ **Date Issued:** _____

Address: _____

System Description: _____

Drainfield Type: _____

- ❑ Conventional Trenches
- ❑ Shallow Trenches
- ❑ Mound
- ❑ Bed
- ❑ Ultra-shallow Trenches
- ❑ Other _____

Septic Tank Size (gallons) _____

Pump Tank Size (gallons) _____

Drainfield Dimensions: _____

Number of Trenches: _____

Trench Length: _____

Septic System Installer:

Name: _____

Address: _____

Telephone: _____

Date System Installed: _____

Septic System Pumper:

Name: _____

Address: _____

Telephone: _____

SYSTEM MAINTENANCE RECORD

DATE	WORK DESCRIPTION	FIRM	COST

This publication is based in part on similar publications by the National Onsite Wastewater Recycling Association (NOWRA), North Carolina Cooperative Extension Service, Cornell Cooperative Extension, and the South Carolina Department of Health and Environmental Control (SCDHEC). This project was funded by a grant from the National Oceanic and Atmospheric Administration (NOAA). The Florida Department of Health (FDOH), Bureau of Onsite Sewage Programs, and the Florida Department of Environmental Protection (FDEP), Nonpoint Source Management Program staff members provided technical review and valuable input. This folder was prepared and published by the FDEP Nonpoint Source Management and Water Quality Standards Section. Graphic design and layout for this folder was provided by the SCDHEC Media Services Art/Graphics Department, a Division of the Bureau of Business Management. For more information, contact your county health department or FDOH, Bureau of Onsite Sewage at (850) 245-4070.

Goal – Work Well & Last Long

- **Know system location**
- **Pump tank regularly**
- **Keep records of repairs & maintenance**
- **Educate users on proper operation & maintenance**

For More Information

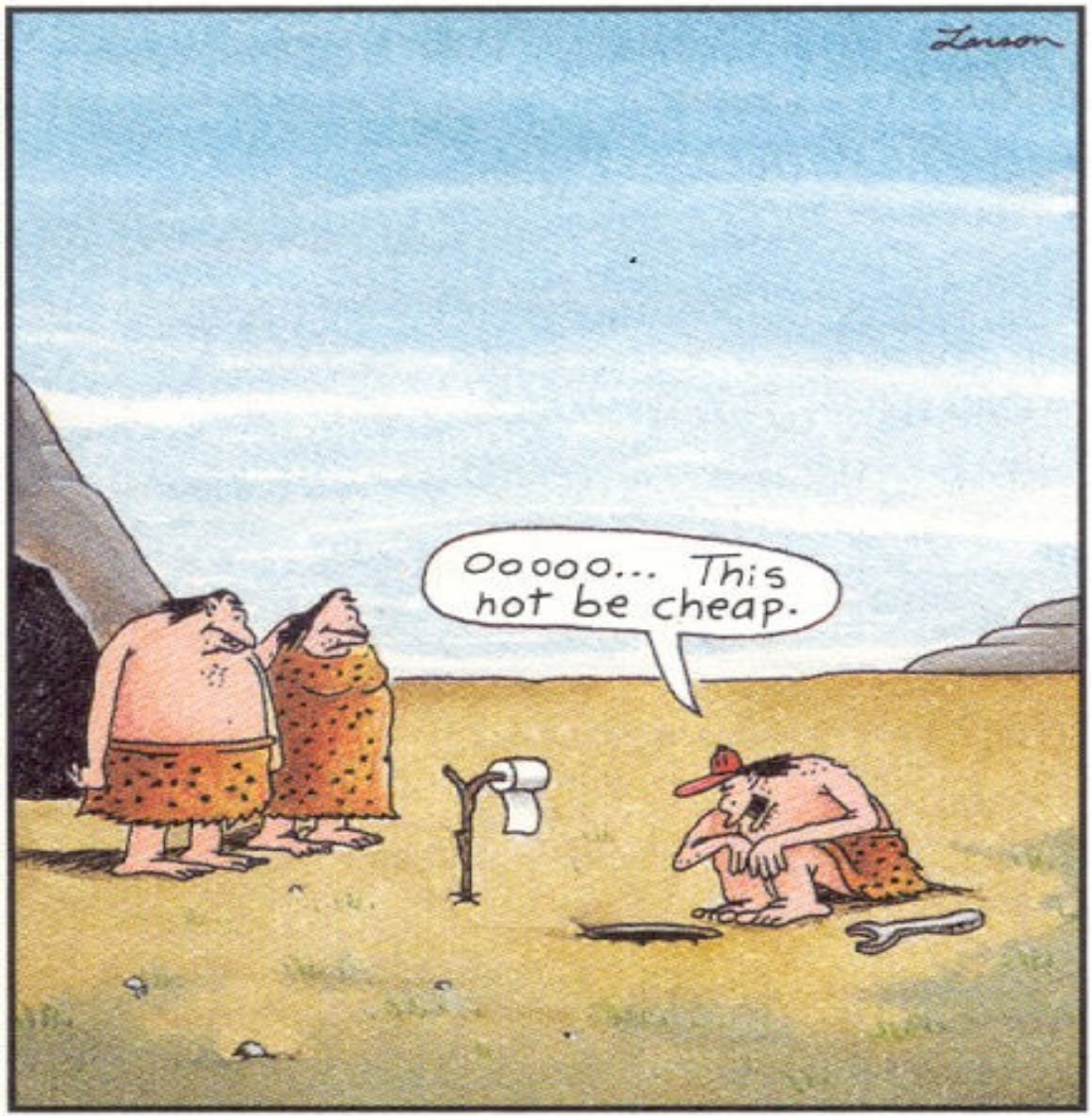
- **DHEC Environmental Health Offices**
  - **Beaufort Co. (843) 525-7627**
  - **Berkeley Co. (843) 719-4649**
  - **Charleston Co. (843) 202-7020**
  - **Colleton Co. (843) 549-2373**
  - **Dorchester Co. (843) 821-9524**
  - **Georgetown Co. (843) 546-3613**
  - **Horry Co. (843) 248-1506**
  - **Jasper Co. (843) 726-7792**
- **DHEC in Columbia**
  - **Environmental Health (803) 896-0641**
  - **Industrial WW (803) 898-4186 or –3236**
  - **Domestic WW (803) 898-4228**

SCDHEC/OCRM

Ocean and Coastal
Resource Management

(843) 744-5838

http://www.scdhec.gov/ocrm



Early plumbers

The Far Side® August

1879

"Modern" toilet paper, consisting of single squares of coarse paper, is invented by the Scott brothers. (Prior to this, people are forced to ... well, let's not go there.)

Wednesday 30